

WHAT IS CLAIMED IS:

1. A method for inducing T-cell tolerance or non-responsiveness of donor T-cells to desired alloantigen or xenoantigen bearing cells *in vitro* comprising the following:

- 5 (i) providing a culture containing donor tissue containing donor T-cells;
- (ii) producing a mixed lymphocyte reaction culture by adding to said donor T-cell culture alloantigen or xenoantigen-bearing cells;
- (iii) adding to the resultant mixed lymphocyte culture a gp39 antagonist;
- and
- 10 (iv) maintaining these cells in culture for a sufficient time to render the donor T-cells substantially non-responsiveness to said alloantigen or xenoantigen bearing cells.

2. The method of Claim 1, wherein the tissue containing donor T-cells is

15 donor bone marrow or peripheral blood cells.

3. The method of Claim 1, wherein the gp39 antagonist is selected from the group consisting of an anti-gp39 antibody, soluble CD40 and soluble CD40 fusion protein.

4. The method of Claim 3, wherein the gp39 antagonist is an anti-gp39 antibody.

5. The method of Claim 4, wherein said anti-gp39 antibody is an anti-human gp39 monoclonal antibody.

6. The method of Claim 1, wherein the donor T-cells are cultured with said gp39 antagonist for a time ranging from about 1 to 30 days.

7. The method of Claim 6, wherein said time ranges from 5 to 15 days.

8. The method of Claim 1, wherein the alloantigen or xenoantigen bearing cells comprise cells or tissue obtained from a potential transplant recipient that has been treated to deplete recipient T-cells.

9. The method of Claim 8, wherein T-cell depletion is effected by irradiation.

10. The method of Claim 1, wherein the donor T-cells are transplanted into a recipient in need of such transplantation.

11. The method of Claim 10, wherein the recipient is in need of immune
5 reconstitution as a result of disease or disease treatment.

12. The method of Claim 11, wherein said disease is cancer or autoimmune disease.

1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 11000 12000 13000 14000 15000 16000 17000 18000 19000 20000 21000 22000 23000 24000 25000 26000 27000 28000 29000 30000 31000 32000 33000 34000 35000 36000 37000 38000 39000 40000 41000 42000 43000 44000 45000 46000 47000 48000 49000 50000 51000 52000 53000 54000 55000 56000 57000 58000 59000 60000 61000 62000 63000 64000 65000 66000 67000 68000 69000 70000 71000 72000 73000 74000 75000 76000 77000 78000 79000 80000 81000 82000 83000 84000 85000 86000 87000 88000 89000 90000 91000 92000 93000 94000 95000 96000 97000 98000 99000 100000